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AGU BOOKSHELF

Climatic Changes (1978), M. I. Budyko, translated from the Russian text by Rima Zolina, English text edited by Leonard Levin, 288 pp., $18.00 (SP0016).

Can we and will we manage our global climate of the future by controlling the atmospheric aerosol level? The relationship between physical climatology and climatic changes are of great significance to human life. In the geological records, climate has been very variable as the pattern of continents and oceans changed. A well-developed study, easily read, a must for all concerned with human life.

Plate Tectonics (revised 1980) edited by John M. Bird, 992 pp., illustrated, softbound, $20.00 (SP0026)

A selection of 69 papers from AGU publications which is intended to illustrate the development and broad aspects of plate tectonics. Included is a historical bibliography of over 900 papers published from 1963 through 1979. An invaluable reference tool and a must for classrooms and libraries.

Outdoor Recreation and Water Resources Planning (1974) Jack L. Knetch, 121 pp., $5.00. softbound (WMO300)

A monograph on the progress in the analysis of recreational use of water and the implications for water resources planning. Among the topics discussed are: demand and outdoor recreation, value and benefits, displaced facilities, and limits and strategies. A most important study for those interested in meaningful recreational planning.

Rio Grande Rift: Tectonics and Magmatism (1979), edited by R. E. Riecker, 448 pp., $16.00 (SP0023).

A series of modern papers with its focus on fitting major earth structures into an overall scene. Intensive research into the Rio Grande Rift has evolved from one largely unknown to one of the best documented continental rifts in the world. This endeavor has become a fine example of interdisciplinary research.

Biological Effects of Electromagnetic Waves (1977), edited by D. R. Justesen and A. W. Guy, 293 pp., $25.00 (RS0001)

Radiobiology–radio frequency radiation has just begun to be understood. This volume explores microbiology and physiology, medical biology and terutology, and the central nervous system and behavior. The perspectives gained are not without some very sobering sidelights and indicate many areas where future research must delve.

The Earth's Crust (1977), edited by John G. Heacock, 754 pp., $39.00 (GM2000).

Understanding the origin and evolution of the earth's continental crust is a major unsolved problem of both academic and practical importance. It is an academic challenge to evaluate the physical and mineral processes still active, and it is a practical matter to understand the resulting distribution of properties, since the crust is a major source of natural energies.

Multiobjective Water Resource Planning (1977), David C. Major, 81 pp., $5.00 softbound (WM0400).

Multiobjective analysis of our water resources frees the planner from the burdens of designing projects that are not fully representative of the social, economic, environmental, and other objectives that govern public investment in our water resources. Of vital interest to all who are interested in water conservation.

Antarctic Snow and Ice Studies II (1971), edited by A. P. Crary, illustrated, 412 pp., $24.00 (AR1600).

Glaciological results of major traverses in Antarctica, covering a continuous profile of approximately 4500 kM. Elevations, annual snow accumulation, ice thickness, gravity, magnetic field values, and seismic studies form the core of this interdisciplinary venture.

Physics of Solar Planetary Environments (1976), edited by D. J. Williams, 2 volumes, 1038 pp., $20.00 softbound (SP0013).

The papers presented at the International Symposium on Solar-Terrestrial Physics show an enormous gain in knowledge and understanding of satellite research during these past years. This symposium underlines the importance of interdisciplinary cooperation in the solar system research communities—solar physics, interplanetary physics, planetary physics, magnetospheric physics, and ionospheric physics.

Man-Made Lakes: Their Problems and Environmental Effects (1973), edited by W. C. Ackermann, G. F. White, and E. B. Worthington, 847 pp., $30.00 (GM1700).

Artificial lakes are symbols of economic advancement and also of dismay. They provoke issues of public judgment that are likely to appear wherever drastic changes are made in an ecosystem. This book researches these lake systems; biological, ecological, environmental, and sociopolitical impacts; and offers alternatives and recommendations.

Quantitative Modeling of Magnetospheric Processes (1979) W. P. Olson, 550 pp., $23.00 (6M2100)

This volume provides an annotated list of quantitative models that serves as a reference on energy particle distribution and magnetic and electric models. The magnetic field is discussed as a relatively stable feature of the magnetosphere, and the electric field papers contain descriptions of past, present, and future experiments in the field.

Scientific Results of the Viking Project (1977), illustrated, foldouts, maps, color plates, 728 pp., $30.00 (SP0020).

The two Viking missions to Mars are NASA's most ambitious and memorable planetary missions to date. From seismology to biology, the scientific range is a record for a planetary technological and exploratory endeavor. Papers reprinted from the *Journal of Geophysical Research.*

Kimberlites, Diatremes, and Diamonds: Their Geology, Petrology, and Geochemistry (1979), edited by F. R. Boyd and Henry O. A. Meyer, 408 pp., $19.00 (SP0024).

The Mantle Sample: Inclusions in Kimberlites and Other Volcanics (1979), edited by F. R. Boyd and Henry O. A. Meyer, 432 pp., $19.00 (SP0025).

The Second International Kimberlite Conference papers cover a variety of research stemming from both the realization that the study of xenoliths and megacrysts provide direct insight into the petrology of the mantle and from the intensive prospecting for diamonds worldwide. A valuable reference source!

Deep Drilling Results in the Atlantic Ocean: Continental Margins and Paleoenvironment (1979), edited by M. Talwani, W. Hay, and W. B. Ryan, 439 pp., $18.00 (ME0300).

Deep Drilling Results in the Atlantic Ocean: Ocean Crust (1979), edited by M. Talwani, C. G. Harrison, and D. E. Hayes, 446 pp., $18.00 (ME0200).

Island Arcs, Deep Sea Trenches, and Back-Arc Basins (1979), edited by M. Talwani and W. C. Pitman, 480 pp., $18.00 (ME0100).

The Maurice Ewing Series is based on biennial symposia which cover convergent tectonics in a broad spectrum of geophysical and petrologic studies. These volumes are intended to give a survey of current studies in present and past areas of subduction by utilizing multichannel seismic-reflection profiles, heat flow measurements, hypocenter locations, and volcanic rock compositions to bring out the processes and products of plate consumption.

Chemistry and Physics of the Stratosphere (1976), reprinted from *Reviews of Geophysics and Space Physics*, 169 pp., $6.00 softbound (SP0011).

Industrial chlorofluromethanes have a very long atmospheric residence and can be detected throughout the troposphere in amounts roughly corresponding to the integrated world industrial production to date! Here is a caring and documented study on a global problem.

Saline Water—A Valuable Resource (1970), edited by F. A. Kohout, reprinted from *Water Resources Research*, 91 pp., illustrated, $2.00 softbound (SP0003).

The rapid development of desalination technology has brought with it the recognition of a new intrinsic worth for saline water, especially saline groundwater. Increased awareness of surface pollution and the need for protection of man's environment has intensified the interest in use of saline aquifers for disposal or storage of toxic industrial wastes and other fluids.

The Earth's Crust and Upper Mantle (1969), edited by Pembroke J. Hart, 735 pp., $5.00 softbound (GM1300).

The enthusiasm of The Upper Mantle Project, an international program of geophysical, geochemical, and geological studies concerning the 'upper mantle and its influence on the development of the earth's crust,' encourages the reader to make a personal contribution to the solution of some of the many unsolved problems of the earth's interior.

Geodynamics: Progress and Prospects (1976), edited by C. L. Drake, 238 pp., $7.50 softbound (SP0012).

The physical properties and processes of the earth's interior, with particular attention given to plastic flow in the deep crust and upper mantle. The mineralogy, petrology, and geochemistry are also explored. Plate tectonics, orogenesis, and island arc building are reviewed for all significant global tectonic regions.

Deep-Seated Inclusions in Kimberlites and the Composition of the Upper Mantle (1977) N. V. Sobolev (translated by D. A. Brown, English translation edited by F. R. Boyd), 279 pp., illustrated, $21.50 (SP0014)

Research into the assemblages of inclusions in diamonds and the intergrowth of minerals moves from hypothesis to synthesis in this important study of deep-seated inclusions in kimberlites and their relationship to upper-mantle formation.

The Geophysics of the Pacific Ocean Basin and Its Margin (1976), edited by G. H. Sutton, M. H. Manghnani, and R. Moberly, 480 pp., $15.00 (GM1900).

Gravity and geodesy, seismology, magnetism, marine geology and tectonics, volcanology and petrology, and tectonophysics, each with its reference to the Pacific area, are reviewed and followed by papers of significance to current areas of research. This book is apt praise to George P. Woolard, to whom the volume is dedicated.

Antarctic Oceanology II: The Australian-New Zealand Sector (1972), edited by D. E. Hayes, 364 pp., illustrated, includes wall maps, $32.00 (AR1900).

Marine geologic, marine geophysical, and oceanographic data collected simultaneously aboard the *USNS Eltanin*, an Antarctic research vessel, during reconnaissance surveying of the entire circumpolar ocean that surrounds the Antarctic continent.

The Use of Artificial Satellites for Geodesy (1972), edited by S. W. Henriksen, A. Mancini, and B. H. Chovitz, 298 pp., $28.00 (6M1500)

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